

Remarks

Further and favorable reconsideration is respectfully requested in view of the foregoing amendments and following remarks.

Claims 1-9 have been amended to place the claims in a more suitable format according to U.S. practice, and in response to the rejection under 35 U.S.C. §112. New claims 10-13 have been added to the application, to cover subject matter which was deleted from claims 1, 4, and 5.

The rejection of claims 1-9 as being indefinite under 35 U.S.C. 112, second paragraph, has been rendered moot in view of the claim amendments.

The patentability of the present invention over the disclosures of the references relied upon by the Examiner in rejecting the claims will be apparent upon consideration of the following remarks.

The rejection of claims 1-9 under 35 U.S.C. § 103(a) as being unpatentable over "Rubin Feed" in view of JP 63309166 (JP '166) and Cox (U.S. Patent No. 4,935,250) is respectfully traversed.

The Examiner takes the position that "Rubin Feed" is related to a gelled feed which contains fish offals, fish oil, alginate, carbohydrates, vitamins, minerals, coloring agent, and calcium carbonate, which is then pelletized and transported through a gelling bath containing formic acid. The Examiner further states that JP '166 teaches that treating raw materials with alkali denatures the enzyme that inhibits gel formation, and then the raw materials are neutralized. Lastly, the Examiner asserts that Cox teaches the use of calcium chloride to set the gel made from alginate to form feed pellets, and that the reference teaches that making fish feed pellets is old in the art.

The main difference between Rubin Feed and the feed material of the present invention is that carbohydrate addition (in the form of wheat meal) is essential to obtain a stable pellet in Rubin Feed, whereas no such addition is required for the pellets of the present invention. Applicants' invention benefits from the non-specific effect of the alkali, which gives the necessary stable structure (the binding of water and oil) without the addition of carbohydrates such as wheat meal. Table II and Figure 2 of the present application clearly demonstrate, as expected, that an increased amount of alginate, which is a carbohydrate, results in an increased gel strength. However, Table II and Figure 2 also show that, unlike Rubin Feed, which requires 15% feed meal to maintain gel strength,

Applicants' feed allows for a decrease in the amount of alginate, without the presence of additional carbohydrates, while maintaining gel strength. Both page 3 of the specification and Example 3 teach that Rubin Feed contains 15% feed meal. On the contrary, rather than adding feed meal to the feed of the present invention, it was instead treated with KOH. The results of Table II demonstrate that when the raw materials of the feed are treated with an additive to increase the pH (such as KOH), then the amount of alginate can be decreased without reducing the gel strength. Table II also shows that even with 5% alginate, when the Rubin Feed lacked the 15% additional feed meal, the mechanical property of the pellet was so poor it was impossible to measure the gel strength. Therefore, unlike Rubin Feed, where it is a necessity, wheat meal is not a prerequisite for pellet quality in the present invention (however, it may be incorporated if desired according to claim 2). The present invention therefore provides the possibility to manufacture feed totally without an excess of carbohydrates. This is beneficial from a nutritional point of view because several fish species do not have carbohydrates as a natural ingredient in their daily diet. Aside from the above major difference, Rubin Feed does not teach pre-treating the fish or animal raw material with KOH, NaOH, KHCO₃, K₂CO₃, NaHCO₃, Na₂CO₃, or (NH₄)₂CO₃, and therefore all of the elements of Applicants' invention are not taught by the reference.

Furthermore, the deficiencies of Rubin Feed are not remedied by either the JP '166 reference or the Cox reference.

JP '166 teaches production of "a good fish paste product containing a blended food raw material" for human consumption. This reference does not teach a gelled pellet intended for feed to be utilized in fish farming, and in fact, the teachings of JP '166 differ from the present invention in many respects. The raw material of JP '166 contains an enzyme which inhibits gel formation, whereas Applicants' seek gel formation. The reference does not teach the use of alginate, or a calcium compound. The reference describes the use of thermal energy to obtain a product contrary to the presently claimed process, which is manufacturing a cold set fish feed pellets. Furthermore, the reference does not teach Applicants' claimed method, wherein the increase of pH above the iso-electric point of the proteins ensures a more rapid solubilization of the added alginate, and also ensures that the added calcium compound remains insoluble. The lowering of the pH during and after

pellet production leads to release of Ca^{2+} with subsequent gel formation. JP '166 teaches away from the present invention, teaching the acidification of the raw material, which would result in products that are not suitable for the intended gelled product according to the present invention.

Furthermore, there is no teaching in either the discussion of Rubin Feed or in JP '166 to treat the raw materials of the feed with an alkali agent. Nor is there a teaching, in either reference, that such treatment would allow the production of a feed without the requirement for 15% feed meal, and with a decrease in the necessary amount of alginate.

Cox describes coated marine animal feed pellets comprising preformed coherent palatable pellets of non-alginate feed material principally in the form of meal or flour. A coating containing alginate covers the particles or may also be provided throughout the body of the pellet. This alginate has been set by a gel-setting material to provide a firm pellet surface that is soft and flexible and that will not disintegrate either when dry or in water. This product is also of the type where different kinds of meal are the main ingredients necessary for their water binding capacity and for giving strength to the feed pellets, as in the Rubin Feed reference.

The Examiner states that Cox is relied upon to teach that making fish feed pellets is known in the art, as is making modifications such as pellet size and gel strength. However, the Examiner has not pointed to any particular disclosure within the reference to support these assertions. Additionally, the Examiner has provided no motivation for combining the teachings of Cox with the teachings Rubin Feed and JP '166, discussed above, nor does Cox remedy the deficiencies of the latter two references. Cox also lacks the teaching to pre-treat the fish or animal raw material with KOH, NaOH, KHCO_3 , K_2CO_3 , NaHCO_3 , Na_2CO_3 , or $(\text{NH}_4)_2\text{CO}_3$ prior to the addition of alginate.

One cannot use hindsight reconstruction to pick and choose among isolated disclosures in the prior art to reconstruct the claimed invention. In re Fine, 837 F.2d 1071, 1075 (Fed. Cir. 1988). Rubin Feed does not express any need for improvement, or any need for an additional alkali treatment step. On the contrary, Rubin Feed is a wet feed, which is currently commercially sold and used. There is no motivation for adding an alkali treatment step to the production of Rubin Feed. Applicants respectfully submit that this rejection is based on hindsight, which is improper according to U.S. practice. The Examiner has cited no evidence to support the conclusion that it would have

been obvious to incorporate an alkali treatment step in the Rubin Feed method. Rather, the Examiner merely states, with no supporting evidence, that the Rubin Feed method should be altered in the manner suggested. In the absence of such evidence, Applicants respectfully submit that, for this additional reason, the rejection of claims 1-9, based on the combination of the above references, should be withdrawn. In re Zurko, 59 USPQ2d 1693.

Therefore, in view of the foregoing amendments and remarks, it is submitted that each of the grounds of rejection set forth by the Examiner has been overcome, and that the application is in condition for allowance. Such allowance is solicited.

Respectfully submitted,

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